No. [redacted] 88

October Term, [redacted] 192[redacted]

HARRY R. STILZ,

Appellant,

v.

THE UNITED STATES.

Appellant's Reply Brief.

Appeal from the Court of Claims.

HARRY R. STILZ,

Pro Se.

[redacted]

Solicitor for Appellee.

IN THE

Supreme Court of the United States,

October Term, 1924. No. 296.

HARRY B. STILZ,

Appellant,

v.

THE UNITED STATES.

APPELLANT'S REPLY BRIEF.

Appellant stated under oath that the invention set forth in Patent 1,066,161 was reduced to practice during August, 1910 (p. 2, par. 5), and that he gave notice of said patent (p. 2, par. 8). The appellee was provided with every facility for determining the truth of the above statements and never denied them, prior to the trial of the case.

In answer to paragraph 2, page 5 of appellee's brief, it has been stated and never denied that the alleged infringing burner, as well as the burner illustrated in Patent 1,066,161, projects the oil spray through the admission hole to the furnace in a whirling current, which covers the entire area of said hole. The air for combustion is likewise directed through the same admission hole where it must commingle with the oil spray. Also, in both cases the oil is atomized perfectly. Therefore, appellant's device and appellee's device both produce precisely the same result.

Controverting the statement on page 10 of appellee's brief, there has been no tornado on record where the velocity of the air current has equalled the velocity

of the "mild" current which is produced within the alleged infringing burners. In view of the well-known destructive power of a tornado (see footnote on page 41), it is contrary to all reason to assert that a myriad of minute streams of a liquid, which is projected into the stream lines of such a "tornado" as is produced within the alleged infringing burners, would not be subjected to destructive action and assistance thereby rendered in the atomization of the liquid. The small atomizer used for spraying one's throat is well known to operate successfully on a "mild" air pressure.

The test referred to on page 126, line 11, of appellee's brief does not prove anything for the reason that it was conducted in the open on a winter day. The cold blast of air from the blower upon the hot oil spray merely increased the viscosity of the oil, before the atomization was completed, sufficiently to offset the assistance which was rendered by the impact of the air stream upon the oil stream. Such a condition would not exist in practice where the radiant heat from the furnace prevents a cooling of the oil by any cold air blast which may be directed through the oil film.

In reference to the argument relative to finding XI, on page 13 of appellee's brief, there appears to be a wrong application of the law to the facts as finally found, as has been pointed out on page 20, paragraph b.

There is nothing in the record upon which to base the statement that the "film proper of liquid oil extends less than half an inch" (p. 18, l. 18, and p. 72, l. 22 of Appellee's Brief). That statement was made by one witness, while the testimony of two other witnesses was not in agreement therewith. The argument in first two paragraphs on page 39 is believed to be incontrovertible. It has never been determined how far the oil streams extend from the nozzle orifice before atomization is completed. The distance varies greatly.

The heavier streams composing the film without doubt extend a number of times farther than half an inch before breaking up into drops. And any current of air which may impinge upon these continuous streams will render some assistance in their atomization. This matter is immaterial, however, since the "hollow cone-shaped film of oil" in claims 6 and 7 in suit is not restricted to any particular condition of the oil forming the film. A mass of oil, when projected into space, may be in the form of a thin sheet having a continuous surface; it may be a thin layer composed of a myriad of minute streams spread out over a wide surface, and it may be a thin layer composed of a myriad of minute spheres. It is still a film in all three cases. There is no possibility of penetrating a film of oil having a continuous surface by means of either steam or air. The film must first be disrupted, the penetration proceeding through the space between the subdivided particles thereof.

Appellee, for some unknown reason, emphasizes the fact that surrounding the mechanical atomizer (12) and fastened to it ("screwed into or otherwise secured") so as to form a part of the complete atomizer, is a casing (17) in Figs. 3 and 4 of Patent 1,066,161 (p. 35, l. 8; p. 38, l. 11; p. 47, l. 3; p. 68, l. 26, and p. 69, l. 9 of its Brief). Certainly the mechanical atomizers of the alleged infringing burners are fastened to the air registers, which form part of the burner casings. The two elements are fastened together in either case. The burner casing in Figs. 3-4 is small because the gaseous fluid which passes therethrough is from under a high pressure and there is therefore needed but a small volume of it to supply the energy necessary to convert the oil spray into a whirling cone of fuel. The burner casings in Figs. A, C and D (pp. 21 and 22) are large because the gaseous fluid which passes therethrough is from under a low pressure and there

must therefore be a large volume of it to do the same amount of work in producing the whirling cone of fuel. It is easily seen that the only real difference between Figs. 3-4 and Fig. C is due to the foregoing fact. For a given size of mechanical atomizer, the former has a small casing with but one inlet, while the latter has a very large casing with thirty inlets.

There appears to be nothing in claims 6 and 7 in suit to prevent the "means surrounding said nozzle for producing a whirling stream of gaseous fluid directed so as to penetrate said film of oil" and the "means for supplying air into the furnace" from being embodied in one and the same element of the burner structure, as is perfectly feasible when low pressure air is used to penetrate the oil film.

In view of the fact that the air passing through the burner shown in Fig. C is directed upon the cone-shaped film of oil in tornado stream lines, with their associated destructive effect, Fig. C also clearly shows an "actual, integral and unitary atomizing nozzle structure."

The emphasized paragraph on page 56 of appellee's brief would imply that infringement could be avoided by merely closing the air openings (5) surrounding the burner shown in Patent 1,066,161, substituting therefor either increased pressure on the air which flows through the burner casing (17) or a larger casing, so that sufficient air could be supplied therethrough to support combustion, notwithstanding the fact that the element for supplying this air for combustion is specified in claims 6 and 7 as (any) "means."

The statement at the bottom of page 53 of appellee's brief is false, because Schutte's burner casing does not lead to a restricted discharge port; he does not direct his whirling air so as to penetrate his oil film,

as was decided in the Patent Office and as appellant has pointed out at the bottom of pages 39 and 42 and in the first paragraph on page 26.

The Court's attention is invited to the figure which appears on page 33 and to the copy of the same and description thereof which, as will be seen in Exhibit B-1, was filed in the United States Patent Office before any of the claims of Patent 1,066,161 had been allowed. The patent claims in suit cover the burner shown in said figure just as explicitly as they cover the burner which is illustrated in Patent 1,066,161. Certainly the Patent Office made a grievous error in allowing these claims, if they must be so construed as to read on the one design of burner only and not upon the other, which was also filed with the application and which falls just as precisely within the stated claims. It will be readily seen that the burner illustrated on page 33 would be almost identical with Schutte's burner, had Schutte merely added to his structure a restricted discharge port. The appellee uses this restricted discharge port, therefore "Appellee's structures are substantially the same and operate on the same principle as" the burner which is illustrated on page 33.

The appellee inserts a quotation at the bottom of pages 90 and 92 of its brief, which is taken from paper No. 23 of Exhibit B-1. The statement was made in reference to a patent to Schutte, No. 759,320, which is not part of the record. Under cover of a name, the appellee endeavors to lead the Court to believe that this statement referred to Exhibit C-2.

In answer to the argument advanced on page 94 of appellee's brief: The mechanical atomizer (12) of Patent 1,066,161 will, under like conditions and by itself alone, produce precisely the same degree of atomization as is produced by the mechanical atomizers forming part of the alleged infringing burners. The steam passing through the casing (17) increases the de-

gree of atomization—it assists the mechanical atomizer—but the "tornado" developed within appellee's structures likewise assists in the atomization (see par. 3, p. 26). The chief function of the gaseous fluid in either case, however, is to convert the oil spray into a whirling cone of fuel (see bottom of p. 26).

In reference to the quotation found at the top of page 96 of appellee's brief: It requires the violent action of the "tornado," produced by driving the surrounding and whirling gas toward its axis of gyration, to penetrate the oil film, assist in the atomization of the oil and convert it into a whirling cone of fuel. Schutte and all the other inventors of the prior art merely whirled the air around the outside of the mechanically atomized oil spray where it remained in greatest measure. The violent action was lacking; the oil film was not penetrated, the air did not cross the path of the oil and thereby assist in its atomization and no whirling cone of fuel was produced.

The only reference cited on page 97 of appellee's brief, in which the air is whirled through a restricted discharge port, is Laing, and his disclosure has no bearing upon the present action for reasons stated on page 29, paragraphs 3 and 6.

The appellee has wandered far afield in its efforts to prove invalidity.

Armstrong does not anticipate for reasons stated on page 23. Kermode does not so much as embody a mechanical atomizer in his structure. His "scraper" (15′) merely separates the oil into two streams which may reunite upon discharge. At best they can but continue as two slightly diverging streams. He shows no means whatever for producing a hollow cone-shaped film of oil. Anthony shows nothing which functions like Patent 1,066,161, and even though he had his patent was not published until 1912.

Effective arguments against the other patents cited to prove anticipation will be found in Exhibit B-1.

That the patent claims in suit read upon and literally cover the appellee's burners is undeniable. The appellee has drawn up a very lengthy brief and cited 100 authorities, to read all of which would be an equally arduous task. A huge "smoke screen" has been produced behind which to conceal the fact that there is no evidence whatever to prove that anyone had ever before constructed a device by means of which "a whirling liquid cone of fuel is projected through a surrounding and whirling gaseous mass." By way of contrast the examiners-in-chief of the Patent Office needed only fifteen words to say what the invention of Patent 1,066,161 was and only ninety-four words to state why appellant is entitled to a monopoly of all structures which are covered by the claims thereof.

In the appeal referred to on page 29, the United States Circuit Court of Appeals for the Second Circuit affirmed the decision of the lower Court. Being confronted by the fact that the District Court had stated no valid grounds upon which to dismiss the bill of complaint, the Circuit Court arrived at the same conclusion in another way, holding that "the invention is limited strictly on the face of the patent to the structures shown in the drawings."

It being evident, however, that the Patent Office had not so decided and being unable to show any error in the original decision allowing the very broad claims, because no one had ever before devised any structure by means of which "a whirling liquid cone of fuel is projected through a surrounding and whirling gaseous mass," the Circuit Court supported its opinion that there was no infringement by contending that "the appellant is obliged to designate different parts of appellee's structure to meet the same elements in the

different claims. . . . He argues that the impeller plate (15) is the equivalent of a casing having a restricted discharge port. Notwithstanding the existence and use of both the impeller plate and the cone (3) in appellee's device, as the appellant argues, the impeller plate (15) is the equivalent of casing (3) in appellee's structure."

The structure referred to is shown as Fig. D, page 22. As stated on page 27, in reference to claim 1 of Patent 1,066,161, the "casing surrounding said nozzle and having a restricted discharge port" is the burner structure for containing the air which passes therethrough, the restricted discharge port being marked (1) in the figure. The "means for causing a gaseous fluid passing through the space within said casing to enter said port in a whirling current" is stated to be the inclined doors (5) assisted by the impeller (15).

In reference to claim 6 (p. 28), the "means surrounding said nozzle for producing a whirling stream of gaseous fluid directed so as to penetrate said film of oil" is the impeller plate (15) which gives to the air which passes therethrough an intensified whirl as it is being driven inward toward the axis of gyration, so as to penetrate said film of oil by means of the conical surface leading to the restricted discharge port (1).

In both claims 1 and 6, therefore, it is the impeller plate (15) which is the principal element for creating the whirling stream of air, which is the more effective in penetrating the oil film, and it is the casing having the restricted discharge port, which drives this whirling stream inward toward the axis, so as to cause the penetration of the oil, the two together being necessary to produce the desired result, *viz.*, the production of a whirling cone of fuel, which, by centrifugal action, is projected through the surrounding and whirling air, which enters the furnace between the periphery

of the impeller plate and the casing wall, this space being primarily the "means for supplying air into the furnace through said hole."

From the above it would appear that the Circuit Court erred in reaching the conclusion, which led it to affirm the decree of the District Court, as should have been seen from the argument contained within appellant's reply brief therein, which is, in part, as follows:

> "In giving consideration to claims 6 and 7, it is well to bear in mind that the defendant makes a double use of plaintiff's invention. The primary function of the air, which passes through the impeller plate (15), is to penetrate the oil film, this current being applied with intense whirl near the point where it will be most effective in converting the oil into a whirling cone of fuel. Secondarily, this impeller plate supplies some air for the combustion of the oil. The primary function of the current which flows between the periphery of the impeller plate (15) and the casing (3) is to supply the air necessary to burn the oil. Secondarily, this air is directed in a whirling current so as to penetrate the oil film, in order to support the centrifugal action, which causes the oil spray to be projected through the air. In applying claims 6 and 7 to the burner in suit, plaintiff gave consideration merely to the respective primary functions.
>
> "If the impeller plate (15) were made large enough to fill the casing (3), it would resemble (Fig. A, p. 21 herein) and the patent claims in suit would still read on the structure. If the openings in the impeller plate (15) were closed, the burner would still be an infringement of the patent in suit (see Fig. C, p. 21 herein). The same basic principle of penetrating the cone-shaped film of oil and converting it into a whirling cone of fuel is found in these two cases as well as in the defendant's combination of the two within one structure.

"Fig. D illustrates the action which takes place within the burner in suit. The oil film is shown in yellow, the air which passes through the impeller plate (15) in blue and the air which passes through the space between the periphery of the impeller plate (15) and the casing (3) is shown in red.

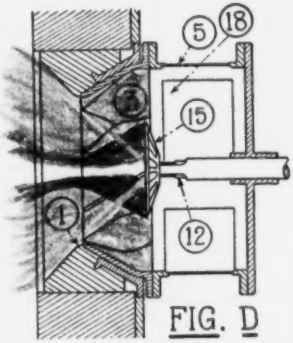

FIG. D

"It is true, as the defendant contends, that 'the air which passes through the impeller blade . . . would tend to fly outward.' But it cannot, because of the restricted discharge port (1), the mass of the air flowing between (3) and (15) acting as a wall which carries this restriction to a point immediately adjacent to the impeller blade.

"Therefore, the impeller plate (15) is the equivalent of a casing having a restricted discharge port, in combination with tangential inlets, provided there is a conical surface leading to a restricted discharge port behind the impeller plate, which directly or indirectly drives the air which passes through the impeller plate toward its axis of rotation."

The Circuit Court asserted that "it is the atomizing of the oil that the inventor is chiefly interested in," notwithstanding the decision of the Examiners-in-Chief of the Patent Office and the following argument, which appears in appellant's reply brief therein:

> "The combinations of elements, which are set forth in the patent claims in suit, broadly cover the only known means for producing instantaneous diffusion in the combustion of fuels. And exceeding great are the advantages of combustion processes, where diffusion is instantaneous,

over those processess which were known in the prior art.

"In furnaces, such as are used for heating metals, where a very high temperature and relatively small amount of heat is transmitted to the material being heated, this improvement manifests itself primarily in a very great reduction in the amcunt of fuel consumed, as indicated in the Link-Belt letter (see p. 34 herein).

"In boiler furnaces, where the chief end in view is the transmission of great quantities of heat to water, the temperature of which is in the neighborhood of 400 deg. Fahr., this improvement manifests itself primarily in a great increase of the boiler's capacity to generate steam.

"A mechanically atomized spray of oil, when projected into a miniature tornado, at its very axis of gyration, produces a much more intimate contact and distribution than can be produced by any other known means. Increased economy of combustion follows, due to a more energetic combination of oxygen and fuel. The intensity of the fire is increased, its temperature is higher, more heat is radiated to the exposed boiler surfaces, and more is taken up by the gases. The heating surfaces of a boiler are also more efficient, because there is a greater difference in the temperature of the water surface and the fire surface of the plates forming the heating surfaces. As the rate of transfer of heat varies as the difference in the temperature of the water on one side of the plate and that of the fuel gases on the other side, the greater this difference, the greater the amount of heat which will pass through a unit of heating surface in a given time. Moreover, large quantities of heat are transmitted to the water by direct radiation from the incandescent walls of the furnace itself.

"One of the requisites of economy, therefore, is high temperature in the furnace. This, on the other hand, means a small supply of air, but an amount which is sufficient to support combustion. To secure perfect combustion with a small amount of air requires an intimate distribution of air and fuel. There must also be a high relative velocity between the air stream and the fuel stream, in order that each particle of combustible may be brought into actual contact with the required number of molecules of oxygen to completely burn it in the shortest possible time.

"That is why the defendants use the restricted discharge port (1); that is why they use the impeller plate (15), which causes the air to penetrate the oil film and converts it into a whirling cone of fuel. They require a high relative velocity between the particles of fuel and the particles of air, and a structure, which will bring the respective particles together in a definite way, in order to produce the results now obtainable.

"The power required to operate the air blowers here is more than offset by the increased evaporative efficiency of the boiler, which is caused by the high velocity of the air currents, which the blowers produce. Moreover, by utilizing the invention of the patent in suit, the defendants are now able to evaporate as much water in one boiler as was evaporated in two boilers before, and at a higher evaporative efficiency. This permits boiler houses to be reduced to half their former size, and more power can be produced therein with the same amount of fuel. It would be difficult to overestimate the importance of this circumstance in connection with boiler installations on board ship."

The Circuit Court's decision, that the patent in suit was not infringed, was reached only by absolutely ignoring every argument which appellant advanced in

his briefs and every statement which he made as an expert witness at the trial. Moreover, the Court ignored all statements found in the patent specification dealing specifically with the invention which is claimed therein, quoting only those parts, which serve rather as a mere background, upon which the invention itself could be depicted. More deplorable still, the Circuit Court, like the District Court and the Court of Claims, absolutely ignored and virtually reversed a most important decision on the question at issue, which was handed down by what is perhaps the most expert board of judges on patent law in existence—the Examiners-in-Chief of the United States Patent Office. And finally, without having found any cause why the patent claims in suit should not have been allowed, or why they do not read explicitly upon the alleged infringing oil burners, it was necessary to hold that these claims do not mean what the language used to express them conveys; that there must be substituted for each of the generic terms embodied in these claims a corresponding specific element, which happens to be described in the specification.

In view of the above, it is submitted that the judgment of the United States Circuit Court of Appeals for the Second Circuit, like that of the Court of Claims, is erroneous, without legal justification and contrary to all the rules, decisions and principles of law laid down by this Honorable Court and found upon the statute books applicable to such causes.

Appellant submits that he has shown a clear case of infringement. Had he been able to take testimony to show the results of tests on his oil burner and the methods used to prevent him from selling the same, after its superiority had been fully demonstrated, particularly the manner in which officials in the service of the United States had forestalled his efforts to reap

his lawful reward under the terms of the contract which was issued to him under the seal of the United States Patent Office, he believes that his claim for compensation would be doubly impressive. If this evidence were fully disclosed, it would show the United States to be in a hitherto-unheard-of inequitable position. The statutes provide the means for according full justice in all the United States Courts, even to pauper litigants. But full justice is not attainable to one who has not the means for taking all the testimony which is relevant to prove his case.

No effort has anywhere been made to show that the patent claims in suit do not read upon and literally cover the alleged infringing devices. The Court of Claims merely relegated these claims to the margin and held that appellant was not entitled under the law to claim anything beyond the indentic device which is illustrated in patent 1,066,161. The United States District Court for the Southern District of New York held that there was no infringement because the Laing patent, which had not been published at the time when the invention of the patent in suit had been reduced to practice, necessitated that an unwarranted construction be placed upon the patent claims in suit. The United States Circuit Court of Appeals for the Second Circuit was not very specific in giving its reason why there was no infringement. Evidently it was based upon the contention that the patent claims in suit were restricted in some unseen manner solely to an improvement in the art of atomizing liquids.

Appellant first devoted his inventive faculties to the art of burning oil just prior to 1905. His first patent was issued to him on September 19, 1905. It was not until August 1, 1910, however, that he succeeded in discovering an improvement, for which he felt justified in expending the time and money necessary to place

it upon the market. His efforts to obtain a patent on the latter improvement were opposed by the examiner of his application, who contended that, if any invention at all was disclosed, it was confined to the identic device as illustrated.

Appellant maintained that he had discovered a new principle in the art of burning fuels and appealed his case to the Examiners-in-Chief of the United States Patent Office, who held that his claims were allowable, "there being in the prior art, as it is revealed by the examiner, no construction in which a whirling liquid cone of fuel is projected through a surrounding and whirling gaseous mass." The language used by the Examiners-in-Chief is most clear and concise and no evidence has yet been produced to show that they had erred in their decision. The Court below simply avoided it.

Firmly believing in the efficacy of a contract which is issued under the seal of the United States Patent Office, appellant devoted years of effort, at immeasurable personal sacrifice, to establish a business manufacturing and selling things for which he believed he possessed a lawful monopoly. If the decision of the lower Court is affirmed, it would appear that all his past efforts have been worse than wasted; that his contract is of no avail, and what are perhaps the broadest claims ever allowed in a patent for oil burners, are void of any meaning. He does not feel that he has been justly treated, when there has been shown in no case any cause why these very broad claims should not have been allowed, especially when it has been conceded by the defendants' witnesses that, in the alleged infringing burners, "a whirling liquid cone of fuel is projected through a surrounding and whirling gaseous mass."

Appellant feels that he should not be thus penalized because he prosecuted his cases before the courts *in forma pauperis* and without legal aid, where it appears from the opinions handed down that he was not considered competent to argue as an expert in his own behalf and where he was not provided with the means for obtaining testimony from others in his favor, even though the statutes make full provisions to that end.

Respectfully submitted,

HARRY B. STILZ,
Appellant.